COPENHAVER

Methods of Sheep Husbandry in Illinois

Animal Husbandry

B. S.

1913

UNIV. OF
ILLINOIS
LIBRARY

THE UNIVERSITY
OF ILLINOIS
LIBRARY
1913
C79

METHODS OF SHEEP HUSBANDRY IN ILLINOIS

BY

MURRAY COPENHAVER

THESIS

FOR THE

DEGREE OF BACHELOR OF SCIENCE

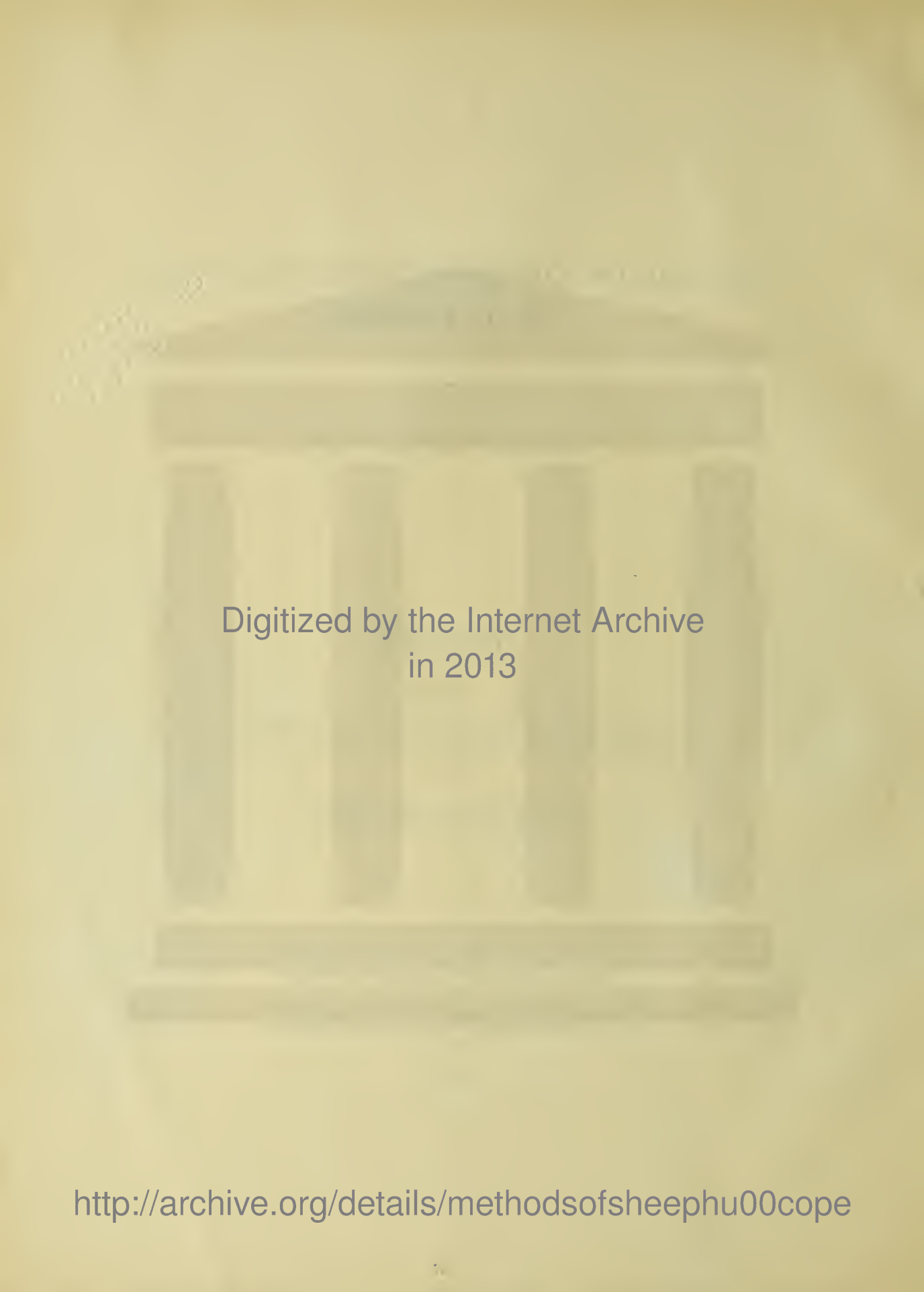
IN

ANIMAL HUSBANDRY

COLLEGE OF AGRICULTURE

UNIVERSITY OF ILLINOIS

1913


Digitized by the Internet Archive
in 2013

http://archive.org/details/methodsofsheephu00cope

1913
C79

UNIVERSITY OF ILLINOIS

Apr. 29 1913

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

Murray Copenhaver

ENTITLED Methods of Sheep Husbandry in Illinois.

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE

DEGREE OF Bachelor of Science in Animal Husbandry

W. C. Coffey
Instructor in Charge

APPROVED: Herbert W. Mumford

HEAD OF DEPARTMENT OF Animal Husbandry

247365

UIUC

HEADS OF DEPARTMENTS

ICINTOSH, Veterinary Science
. HOPKINS, Agronomy and Chemistry
BLAIR, Horticulture
V. MUMFORD, Animal Husbandry
BEL BEVIER, Household Science
. RANKIN, Agricultural Extension
. HARDING, Dairy Husbandry

UNIVERSITY OF ILLINOIS
EDMUND J. JAMES, PRESIDENT
COLLEGE OF AGRICULTURE
AND
AGRICULTURAL EXPERIMENT STATION
E. DAVENPORT, DEAN AND DIRECTOR

Postoffice, Urbana or Champaign
Tel., Frt. and Exp., Champaign or Urbana
Visitors Best Arrive Via Champaign

ANIMAL HUSBANDRY

HERBERT W. MUMFORD

Beef Cattle
H. P. RUSK
W. H. SMITH

Horses
J. L. EDMONDS
J. J. YOKE

Sheep
W. C. COFFEY
V. A. PLACE

Swine
.....
W. J. CARMICHAEL

Meat
L. D. HALL

Poultry
D. O. BARTO

Animal Nutrition
H. S. GRINDLEY
A. D. EMMETT
SLEETER BULL
W. E. JOSEPH
H. H. MITCHELL
LEONORA PERRY

Systems of Live Stock Farming
W. F. HANDSCHIN
J. R. WELLS

Genetics
J. A. DETLEFSEN

Assistant
H. C. M. CASE

April 30, 1913

Dean E. Davenport,

College of Agriculture

Dear Dean Davenport:-

At the request of Professor Mumford, I am submitting herewith the B. S. thesis of Murray Copenhaver, which contains work done under my supervision. This was not an extensive investigation and Mr. Copenhaver received only four hours credit for the work he did.

Very respectfully yours,

W. C. Coffey

Assistant Professor of Sheep Husbandry.

METHODS OF SHEEP HUSBANDRY IN ILLINOIS

I

Early History of the Sheep Industry in Illinois *

No mention of sheep is made in the early history of the Illinois Territory. The first sheep were probably brought into the Territory in 1797 by settlers from Virginia. Other settlers who came into the new country at a later date brought livestock including sheep. These sheep were of the nondescript type common in the eastern states. Wolves were a source of much annoyance to sheep breeders. As the Territory, and after 1818 as the State, Illinois became more densely populated, sheep began to be kept in considerable numbers. For a long time it was necessary to pen the sheep at night and watch them during the day, and even then the wolves would occasionally kill some.

The flocks were small and were usually kept for the wool they produced. At this time the flesh was not considered fit to eat. The wool was used largely for garments for the family and was made into clothing by home industry. About 1840 there was a great movement of sheep to the western states of Illinois, Wisconsin, Iowa, and Missouri. These sheep were principally Merinos and good grades, in which no blood could be said to predominate although they resembled the Leceister. They were driven overland in large

* "Special report on the History and Present Condition of the Sheep Industry of the United States" United States Department of Agriculture, by
Ezra A. Carman, H. A. Heath, and John Minto.

in large bands. At this time Sangamon County in which Springfield is located, was the center of the wool growing industry in the State and with the exception of one county in California, produced more wool than any county in the United States.

The sheep industry increased rapidly as the flock-owners learned the proper management of sheep on the prairies. Wool was the principal source of profit and many realized one hundred per cent on their investment from the wool and lambs. The cost of maintainance was small, not over fifty cents per head. The use of blue grass pasture made this possible. The sheep could be carried the entire winter on blue grass pasture, and harvested feeds were needed only when the snow was very deep.

The Spanish Merino breed was the favorite, especially in the northern part of the state. The French Merino was popular in the southern part. The Saxony Merino, Cotswold, Leceister, and the Southdown had been introduced and seemed to do better than in the older states. In 1857 the Illinois Stock Importing Association sent a committee to England to buy improved stock, particularly cattle. They purchased some Cotswold and Southdown sheep which were sold at auction in Springfield. The popularity of the long and middle wools was increased by their distribution and by the consumption of mutton which was now large enough to be considered. The Merino easily held first place although the demand for long, coarse wool at the time of the Civil War, increased the use of Leceister and Cotswold blood to a great extent.

In 1865 there were in the state about 5,000,000 sheep which sheared 12,000,000 pounds of wool. This was the highest

point reached in the production of sheep and wool in Illinois. Wool was worth fifty cents per pound in 1822. In 1860 wool was a drug on the market twenty-three and twenty-five cents per pound, but in 1862 and 1867, it went up to one dollar per pound. The people did not realize that the price would eventually drop and fabulous prices were paid for sheep. Experienced men paid as much as three and four hundred dollars for rams and a price of one thousand dollars is recorded. Eastern breeders took advantage of this demand and sold culls and diseased sheep which were not worthy of a place in any flock.

When the war closed, the prices for sheep and wool broke. Wool went begging at twenty-five cents per pound and thousands of sheep were slaughtered for their pelts and tallow. The census of 1870 showed half as many sheep as there were in 1865. At this time ravages by sheep-killing dogs were first mentioned.

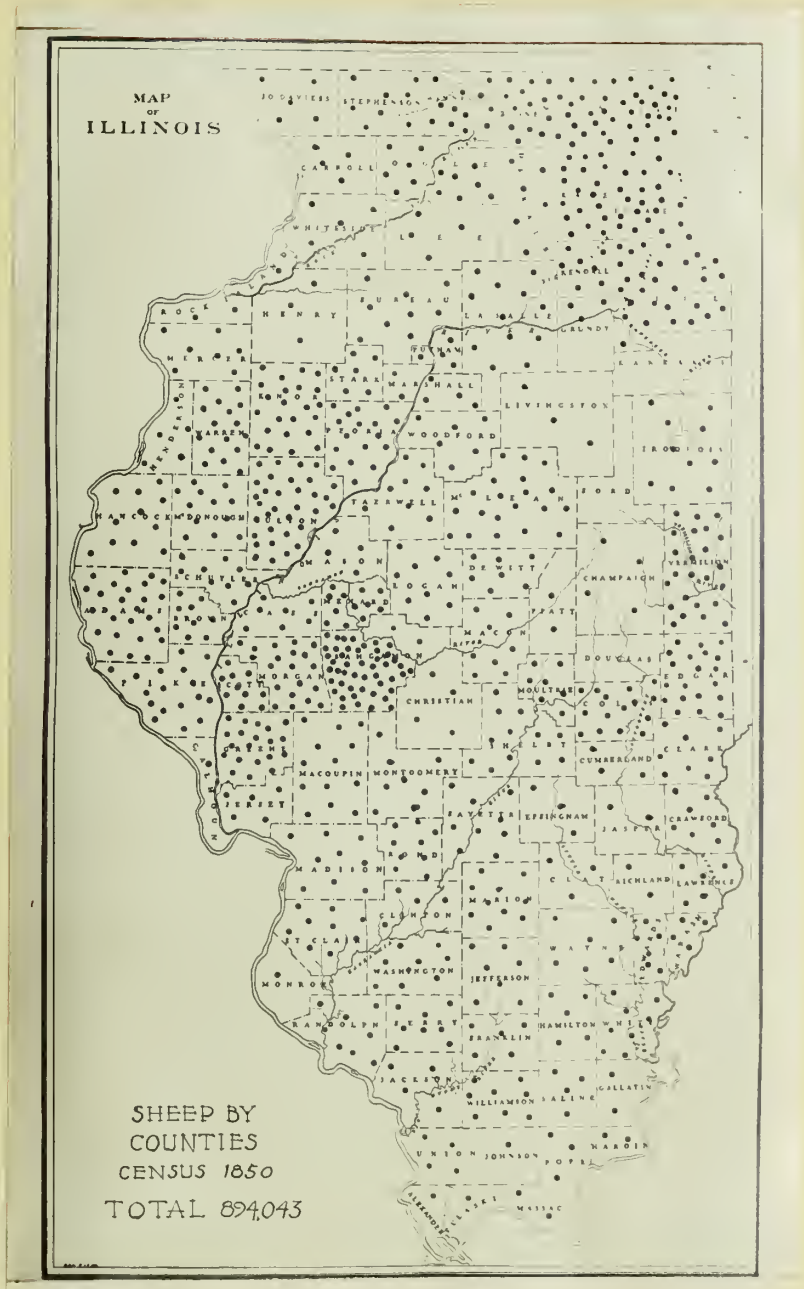
Interest in fine wools decreased very markedly, but more attention was now given to mutton sheep. A protective tariff in 1867 gave an impetus to the breeding of fine wools and Merinos and Merino crosses increased a little. There was a decrease in the number of sheep kept from 1870 to 1880; but there was an increase in the amount of wool clipped, due to the improvement of the fleece of the Merino and to the heavier fleece of the mutton sheep.

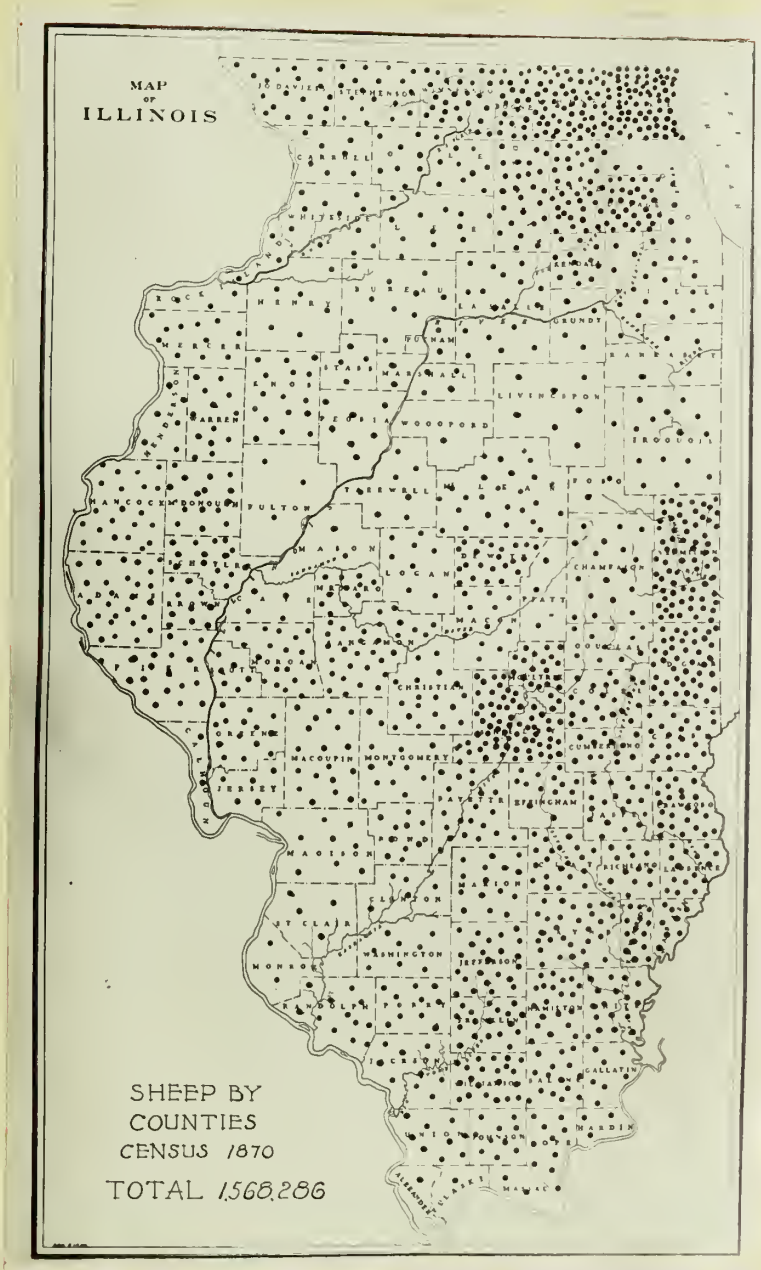
In 1881 and 1882 the demand for sheep was the greatest in the history of the state. Farmers sold their cattle and purchased sheep. The mutton type was the one most sought because there was a market for mutton and the mutton sheep sheared a heavy

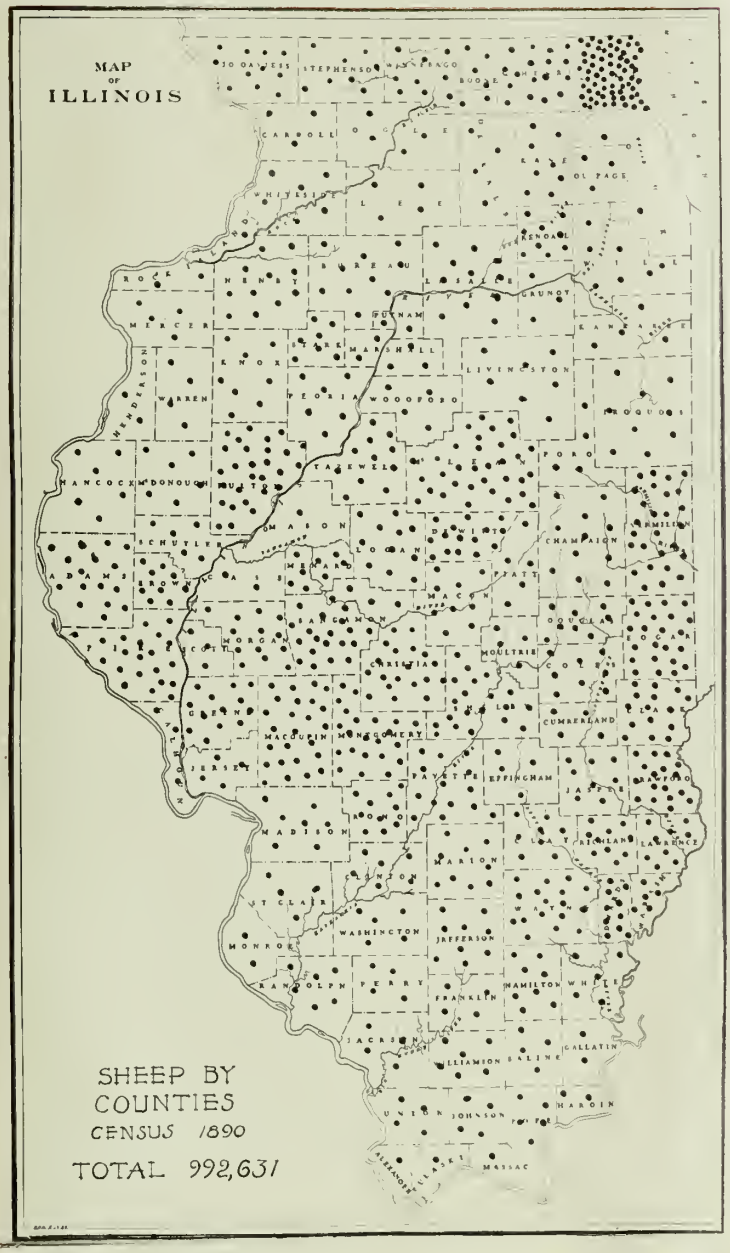
fleece. The popularity of the Merino had been injured by a series of fleece washings which showed a great shrinkage in the fleeces of the fine wools. The interest declined after two years and many men who had flocks neglected them. Interest in sheep continued to decline until in 1890 there were only 688,387 where there had been 1,037,073 in 1880. This was due to the low price of mutton, to the destruction by dogs, to the rise in the value of land, and to the increase in dairy farming.

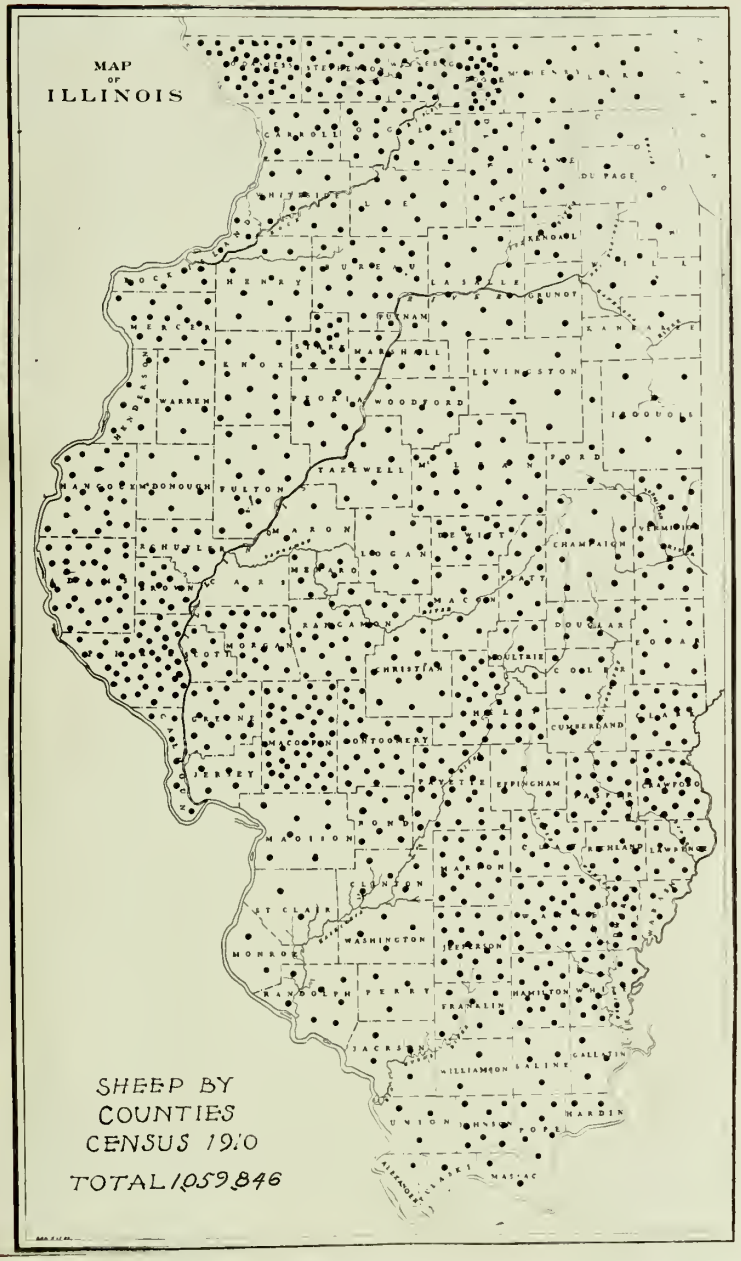
It is interesting in this connection to study the maps showing the distribution of sheep by counties in 1850, 1870, 1890, and 1910.* These show that in 1850 Sangamon County was the center of the sheep industry. In 1870 Lake County was first with Shelby, Edgar, and Vermillion Counties almost as densely populated. In 1890 we find Lake County easily first. In 1910 the population shifted to the south and Macoupin County was first. The tendency has been for the greatest numbers of sheep to settle in the rougher, cheaper lands out of the corn belt and the dairy regions.

* These populations were secured from the United States Census Reports for 1850, 1870, 1890, and 1910. Each dot represents 1000 sheep.


MAP
OF
ILLINOIS
SHEEP BY
COUNTIES
CENSUS 1850
TOTAL 894,043


MAP
OF
ILLINOIS
SHEEP BY
COUNTIES
CENSUS 1870
TOTAL 1,568,286


MAP
OF
ILLINOIS
SHEEP BY
COUNTIES
CENSUS 1890
TOTAL 992,631


MAP
OF
ILLINOIS
SHEEP BY
COUNTIES
CENSUS 1910
TOTAL 1059846

The mutton type gradually replaced the Merino, due to the increased demand for mutton and the low price of wool. At the Chicago Fat Stock Show in 1885, the Southdown, Shropshire, Hampshire, Cotswold, Lincoln, and Leceister breeds of the mutton type were represented. A yearling Shropshire was the best wether showed. Importation practically ceased during Civil War time, for the people then turned to the production of wool; but now many Southdowns were again imported. Shropshires were first advertised in 1880 and after 1885 interest in them developed very rapidly. This breed proved to be well adapted to the corn-belt region and crossed well with pure Merinos and Merino grades.

To get at the present status of the sheep industry in Illinois; questionaires were prepared under the direction of Professor Coffey and sent to sheep breeders of the State.

The questionaires were as complete as it was possible to make them and yet have the questions in such form as to be readily answered. They were as follows:

Number

METHODS OF SHEEP HUSBANDRY

Note- It is not expected that each party addressed will be able to answer all the questions submitted below. An earnest effort to answer as many as possible will be appreciated.

1 Size of farm Value per acre

2 Do you own or rent? If you rent give terms of lease and whether for cash or share and what share.

3 Number of sheep.

4 Kind and number of livestock other than sheep.

5 How long engaged in sheep raising?

6 Breeding of ewes kept - what breed, grades or pure breds?

7 At what age are your ewes when they produce lambs for the first time?

8 At what age are your ewes when disposed of because they are no longer useful for breeding purposes?

9 Do you retain ewe lambs to replace ewes no longer useful for breeding? Where do you purchase ewes and at what price?

10 Of the total number of ewes placed with ram what percent
(a) fail to breed?

(b) fail to raise lambs?

11 (a) How many ewes do you breed to one ram? (b) Do you allow the ram to run with ewes all the time during breeding season or do you allow him with them for a limited time during each day? If the latter, for how long?

12 Percent of ewes that fail to suckle lambs well.

13 Breeding of rams used - what breed, grades or pure breds.

14 Where do you purchase breeding rams and at what cost?

15 Age and approximate weight of rams.

16 Do you use rams of the same breed continuously? If not, how often do you change, and give reasons for so doing?

17 How many seasons do you keep the same ram? Do you breed him to his get?

18 Give time of lambing; give approximate time when first lambs are born; the last.

19 On the basis of the number of ewes placed with rams give per cent of lambs raised to marketable age.

20 At what age do you wean your lambs and how do you treat them afterward?

21 Do you dock and castrate lambs? At what age? If not, why?

22 How do you feed and care for your ewes (a) from time they are bred until they lamb; (b) from lambing until lambs are weaned; (c) after weaning until time for breeding?

23 How do you care for your rams (a) during breeding season; (b) out of breeding season? (c) Do you allow them to run with the ewes during the period of pregnancy?

24 Do you feed grain, hay, or other feeds to lambs while they are suckling; what and how much? At what age do you begin and how long do you continue? Do you have special crops such as rye or rape for ewes and lambs during the suckling period?

25 Crops grownon the farm. Yield.

26 Amount of grain and hay sold from the farm.

27 Feeds purchased.

28 How many months are your sheep allowed on pastures and fields and over how much of your farm are they allowed to graze in a twelve month period?

29 What kinds of pasture, forage, and aftermath are grazed over by sheep during the year? If possible state acreage of each. Give estimate of value of pasture and forage consumed by sheep. To what extent do the sheep share pasture with other livestock? If you have a record of the number of sheep and the number of days they were allowed on certain areas of pasture, forage, or aftermath, kindly submit same.

30 How many months are sheep fed harvested feeds and name the kinds of feeds used.

31 If possible state the amounts of fed and the cost of producing these feeds.

32 State cost and nature of buildings used for sheep.

33 Give estimate on total cost of maintaining sheep for twelve months, including such items as cost of harvested feeds, pasture, labor, shelter, interest on investment, etc.

34 Give time of marketing lambs and sheep. Approximate weight of lambs and of sheep at time of marketing.

35 Do you ship to market direct or sell to local butchers or drovers? What conditions in your locality, if any, discourage shipping direct to the open market?

36 If possible, state net prices received per cwt. or per head for sheep and lambs in

1907
1908
1909
1910
1911
1912

37 Give method of shearing and average weight of fleece.

38 Method of shearing, by hand or by machine; cost per head; kind of twine used; kind of sacks and cost.

39 Do you dip your sheep; how often; what dip do you use?

40 Do you market your wool clean and comparatively free from burs and tags?

41 Methods of marketing wool- i.e.,to local dealer, to buyers from distance, to wool commission houses, or to woolen mills?

42 Net prices received for wool per pound in
1907
1908
1909
1910
1911
1912

43 State total annual income from sales of (a) sheep (b) lambs (c) wool.

44 What valuation would you place on the manure from one hundred sheep for one year?

45 Give reasons for keeping sheep on your farm.

46 What are the greatest discouragements to keeping sheep in your community? Do dogs, internal parasites, external parasites, lack of marketing facilities, and inadequate fencing belong in this list? Which one is the greatest draw back?

47 Is the keeping of sheep as a regular practice on increase or decrease in your community? Why?

48 Have any important changes taken place in the breeding of the sheep in your community in recent years, such as the more common use of pure bred rams, the changing from one breed to another, or the use of western ewes?

Name

Post Office

County State Date

Seventy-eight questionaires were sent out. The addresses were supplied by recognized sheep breeders and Professor Coffey. Twenty-eight questionaires which were more or less completely answered, were returned. The answers come from twelve counties and in a measure may be considered representative of the conditions in the state.

II

Results obtained from Questionaires

The following tabulations are summaries of:

QUESTION 1 Size of farm. Value per acre.

QUESTION 2 Do you own your farm or rent? If you rent give term of lease and whether for cash or shares and what shares.

QUESTION 5 How long engaged in sheep raising?

No.	Owner or renter	Acreage of farm	Value per acre	Number years experience with sheep	County
1	Owner	408	$ 80	15	Macoupin
2	Renter	270	100	17	Macoupin
3	Owner	230	125	30	Greene
6	Owner	160	140	1	Greene
8	Renter	500	100		Crawford
9	Renter	110	100	13	Crawford
17	Renter	500	175	24	DeWitt
20	Owner & Renter	200	250	14	Devitt
24	Renter	380	150	6	DeWitt
25	Renter			20	Devitt
35	Renter	195	150	25	DeWitt
36	Renter	174	250	14	Stark
40	Renter	300	150	15	Stark
39	Owner	160	225		Henry
42	Owner & Renter	240	200	5	Knox

No.	Owner or renter	Acreage of farm	Value per acre	Number years experience with sheep	County
46	Owner	262	$160	1	Tazewell
49	Renter	160	300	1	Tazewell
51	Owner	200	200	4	Tazewell
52	Renter	170	250	10	Tazewell
55	Renter	160	250	25	Tazewell
62	Renter	240	80	10	Coles
69	Owner	146	75	4	Coles
71	Owner	341	100	30	Coles
72	Owner	62	100	12	Cumberland
73	Owner & Renter	800	100	40	Coles
76	Owner	310	150	5	Warren
79	Owner	1117	150	7	Greene
320	Owner	600	160	12	Ogle

Twelve of those reporting own their farms, thirteen rent for either cash or grain rent, and three own some land and rent the remainder. There were answers from twelve counties as follows; DeWitt five, Tazewell five, Coles four, Greene three, Crawford two, Stark two, Macoupin two, Warren one, Cumberland one, Knox one, Henry one, Ogle one.

The following tabulation shows the answers to:

QUESTION 3 Number of sheep.

QUESTION 4 Kind and number of livestock other than sheep.

QUESTION 6 Breeding of ewes kept - what breed, grades or pure breds?

No.	Horses & mules	Cattle	Hogs	Sheep	Acres per sheep	Breeding of sheep
1	28	40	70	60	6 4/5	Pure Oxford
2	12	3		275	9/10	Pure Rambouillet
3	30	35	60	60	3 5/6	Pure Cotswold and Shropshire
6	10	30	85	41	7 [illegible].41	Grade Shropshire
8	20	6		40	12½	Grade Shropshire
9				25	4 2/5	Grade Shropshire
17	20	90	100	200	2½	Pure Shropshire
20	6	6	50	95	2 2/19	Grade Shropshire
24	20	60	100	124	3 1/15	Grade Western
25				50		Grade Western
35	9	12	25	57	3 8/19	Grade Shropshire and Merino
36	10	10	10	50	3 12/25	Pure Shropshire
39	20	19	70	40	4	Grade Shropshire
40	15	25	75	100	3	Grade Shropshire
42				50	4 4/5	Pure Shropshire
46		40	105	17	15 7/17	Pure Oxford
49	7	6	30	12	12 1/2	Pure Oxford
51	10	30	40	15	12 1/3	Grades
52	18	20		30	5 2/3	Grades
53	6	17	21	10	16	Grades
62				200	1 1/5	Grade Shropshire
69	8	11	50	22	6 7/11	Grade Shropshire
71	10	47	90	56	6 1/11	Grade Shropshire
72	4			25	2 12/25	Pure Shropshire
73				23	34 18/23	Grade Shropshire

No.	Horses & mules	Cattle	Hogs	Sheep	Acres per sheep	Breeding of sheep
76	11	6	100	100	3 1/10	Grade Western
79	125	90	200	125	8 11/12	Pure Shropshire
220	45	200	200	30	20	Grade Shropshire

Number of farms	Acreage	Average size	Average number sheep in flock	Pure bred flocks	Grade flocks
1	50-100	62	25	1	
7	100-160	149 1/7	35	1	6
8	161-240	206 1/8	70	3	5
4	241-320	285½	123	2	2
6	321-640	454 5/6	85	2	4
2	800-1117	958½	74	1	1

Breed of sheep	Number keeping flocks
Pure Oxford	3
Pure Rambouillet	1
Cotswold and Shropshire	1
Grade Western	3
Grades	3
Grade Shropshire and Merino	1
Grade Shropshire	11
Pure Shropshire	5

Ten of those who answer keep pure bred flocks, and eighteen have grades. Two of those who have grades use western ewes and one uses western grades but is working into grade Shropshires. Eleven keep grade Shropshires and five have pure bred Shropshires.

QUESTION 7 At what age are your ewes when they produce lambs for the first time?

Sixteen breed their ewes so that they produce lambs for the first time when two years old. Nine breed the ewes to lamb at one year to a year and a half, and one man does not have the ewes lamb until they are three years old. One gives an indefinite answer and one does not make any statement.

QUESTION 8 At what age are your ewes when disposed of because they are no longer useful for breeding purposes?

One disposes of his ewes when they are four years old, one sells them at four to six years, and another at six to eight years. At five years, nine dispose of their ewes, and three sell them at six to nine years. Two do not keep their ewes very long as they buy and sell according to market conditions. Five keep their ewes as long as their mouths are good and they keep vigorous and thrifty. Four do not answer. From these answers one learns that the ewes are sold at five years in most cases before they begin to go back in vigor and constitution.

QUESTION 9 Do you retain ewe lambs to replace ewes no longer useful for breeding? Where do you purchase breeding ewes and at what price?

Twenty-three breeders retain ewe lambs to replace ewes no longer useful in the flock. Three report they sometimes do and one man never does so.

The breeders from whom ewes have been purchased are: Max Chapman of Ohio, Truesdale and Merril, Totten, George Allen, John Kiolin, H. E. Ballinger, and Stone. Two men purchased ewes in Canada at prices of fifteen and thirty dollars. Two have

purchased ewes on the Chicago market at prices of $4.25 to 6.00 per hundred weight. One bought ewes in Kansas City at four and five dollars.

QUESTION 10 Of the total number of ewes placed with ram, what percent
(a) fail to breed?

(b) fail to raise lambs?

The number of ewes that fail to breed is as follows:

None	6
Very few	4
1 to 5%	12
7 %	1
10 %	3
20 %	1

The number that fail to raise lambs is as follows:

None	3
Very few	2
1 %	1
3 & 5 %	6
8½ %	1
10 %	8
12½%	2
15 %	2

It will be seen that the number of ewes that fail to breed does not exceed five percent except in five cases. Ten report very few or none and twelve report from one to five percent. This percentage is small when one considers that usually each year the breeder has a number of untried ewes and that the

flocks as a whole are small.

In regard to the number of ewes that fail to raise lambs; five report none or very few, eight report one to eight and one-half percent, eight report ten percent, and four over ten percent.

QUESTION 12 Percent of ewes that fail to suckle lambs well.

The percent of ewes failing to suckle lambs well is given as follows: ten none or very few; eight one to six percent; three over six percent. This percentage is very low and shows that the ewes receive attention at least during lambing.

QUESTION 11 (a) How many ewes do you breed to one ram? (b) Do you allow him to run with the ewes all the time during the breeding season, or do you allow him with them for a limited time each day? If the latter, for how long?

The summary of the answers to this question is as follows.- Three men breed their ram to twelve, fourteen, and sixteen ewes respectively; eleven breed the ram to twenty or thirty ewes; ten to thirty to forty-five ewes and three to fifty ewes. Several of the men state that while their flocks are small, they think the ram capable of breeding fifty ewes, and one man states that the ram should cover one hundred ewes if not with them continually.

Twenty-four breeders allow the ram to run with the ewes continually during the breeding season. One man allows the ram in with the ewes a half day at a time. Another man uses two rams and by turning out a ram wearing an apron and whose breast is smeared with paint, he can find the ewes in heat , and then can get a record of when served and by which ram.

QUESTION 13 Breeding of rams used - what breed, grades or pure breds.

QUESTION 14 Where do you purchase breeding rams and at what cost.

No.

1* uses pure bred Oxford, imported and costing seventy-five dollars.

2* uses pure bred Rambouillet from Oregon or Michigan costing one hundred and fifty to two hundred and fifty dollars.

3* uses pure bred Shropshire or Cotswold rams purchased from the importers at forty to fifty dollars.

6 uses pure bred Shropshire rams from Iowa breeders at a cost of twenty to thirty dollars.

8 uses pure bred Shropshires purchased at a cost of twenty-five dollars from local breeders.

9 uses pure bred Shropshires purchased locally about twenty-two and a half dollars each.

17* uses pure bred Merino or Shropshire rams purchased from Illinois breeders at a cost of fifty dollars.

20 uses pure bred Shropshires purchased at the International, State Fairs, or from G. Howard Davidson, George Allan, and J. E. Greene.

24 is using this year two Romney Marsh, one Hampshire, and one Shropshire. All were purchased at the International at a cost of twelve to thirty-three dollars.

25 uses pure bred Shropshires purchased locally.

35 uses pure bred Shropshire or Delaine rams purchased in Ohio or Illinois at a cost of fifteen to fifty dollars.

36* uses pure bred Shropshires, purchased locally for fifteen dollars.

39 uses pure bred Shropshire rams purchased locally at a cost of fifteen to twenty-five dollars.

40 uses pure bred Shropshire rams purchased locally at a cost of fifteen to twenty dollars.

42* uses pure bred Shropshires purchased locally for twenty-five dollars.

No.

46* uses pure bred Oxfords purchased from Stone for thirty dollars.

49* uses Oxford grades purchased locally at a cost of six and one half dollars each.

51 uses grade Shropshires, purchased locally at a cost of fifteen dollars.

52 uses grade Shropshires purchased locally.

53 uses grade Oxford rams purchased from shippers.

62 uses pure bred Shropshire rams purchased locally.

69 uses pure bred Shropshire from Chas. Armstrong at a cost of ten dollars.

71 uses pure bred Shropshires purchased from local shippers.

72* uses pure bred Shropshire rams purchased from local breeders.

73 uses pure bred Shropshires purchased from local breeders.

76 uses pure bred Shropshires purchased from breeders at a cost of twenty-five dollars.

79* uses pure bred Shropshires purchased from breeders like Harding at a cost of one hundred and twenty-five dollars.

220 uses pure bred Shropshires purchased in locality at a cost of twenty-five dollars.

* Pure bred flocks.

Twenty complete answers were received to these questions. In the eight incomplete ones, the cost of breeding rams was not given. Seventeen use pure bred Shropshire rams; two grade Shropshires; two pure bred Oxfords; two grade Oxfords; one pure bred Rambouillet; one pure bred Romney Marsh, Hampshire, and Shropshire; one uses pure bred Shropshire and Merino; one pure bred Shropshire and Cotswold; one pure bred Shropshire and Delaine.

Fourteen purchase rams locally at a cost of six and a half to twenty-five dollars each; two at the International and

and State Fairs, costing from twelve to thirty-three dollars; two from local shippers at the prevailing market price; six from Iowa, Illinois, and Ohio breeders at a cost of fifteen to fifty dollars. Four name breeders and give cost of last ram purchased as from ten to one hundred and twenty-five dollars. Two buy of importers at a cost of forty to seventy-five dollars. One buys from Oregon or Michigan breeders at a cost of one hundred and fifty to two hundred and fifty dollars each.

QUESTION 15 Age and approximate weight of rams.

The age and approximate weight of breeding rams are-

No.	Breeding of ram	Age years	Weight lbs.
1	Oxford	1-4	300
2	Rambouillet	1-3	
3	Shropshire	Yearling	175-200
6	Shropshire	Yearling	140
8	Shropshire	Yearling	200
9	Oxford (grade)	1	125
17	Shropshire	2	175
	Merino	2	175
20	Shropshire	Yearling	175
24	Romney Marsh	5	250
	Hampshire	Yearling	200
	Shropshire	2	200
25	Shropshire	1-6	175-200
35	Shropshire	1-3	175
	Delaine	1-3	175
36	Shropshire	Yearling	150-200

No.	Breeding of ram	Age years	Weight lbs.	
39	Shropshire	2	200	
40	Shropshire	2-3	200-300	
42	Shropshire	2	200	
46	Oxford	1	80	
49	Oxford (grade)	1	125	
51	Shropshire (grade)	Yearling	180-200	
52	Shropshire (grade)	2-3		
53	Oxford (grade)	1	150	(older preferred)
62	Shropshire	2	180-200	
69	Shropshire	2	200	
71	Shropshire	2-3	180-200	
72	Shropshire	2	200	
73	Shropshire	1-4		
79	------			
220	Shropshire	2-3	250	

From the answers given, one learns that rams are used at ages ranging from one to eight years with a weight ranging from eighty to three hundred pounds. The breed, age, and weight are as follows:-

Breed	Number of rams	age	Average weight.
Romney Marsh	1	5	250
Hampshire	1	Yearling	200
Shropshire	15	2-8	195
Shropshire	7	1-2	168
Oxford	4	1-4	159

Breed	Number of rams	age	Average weight
Merino	2	2	175
Cotswold	1	Yearling	250

QUESTION 16 Do you use rams of the same breed continuously? If not how often do you change, and give reasons for so doing.

In answer to the "Do you use rams of the same breed continuously?", eighteen reply that they use rams of one breed continuously, five change breeds, and five do not answer. One man changes each year, another replies that he does not think it advisable to keep sheep upon one farm continuously, and a third believes that a change of the breeds of rams used is a benefit to the flock.

QUESTION 17 How many years do you keep the same ram? Do you breed him to his get?

In reading the answers to this question, one learns that one man uses a ram for five years but does not breed him to his get. Seventeen use a ram for two years and occasionally use him the third year. Four use the same ram only one year. Twenty-five do not breed the ram to his get and the other three do not follow out the practice of breeding him to his get. The general tendency is to use a ram for two years with no in-breeeding.

QUESTION 18 Give time of lambing; give approximate time when first lambs are born; the last.

The time of lambing, according to the answers, extends from January to the last of May. Most of the lambs come in March and are out of the way when the spring work begins. The time of lambing and the number that have lambs come in that period are as follows:

Number	Period
6	March 1 to April 1
2	Last of February to the middle of March
4	February to April
1	March 20 to March 31
1	March 1 to April 10
1	April
1	March 1 to April 20
1	January 1 to April 1
1	March 1 to 15
3	March to May
2	March 1 to 20
1	March 25 to April 20
1	March 10 to April 5
1	February on
1	January to May

QUESTION 19 On the basis of the number of ewes placed with rams give percent of lambs raised to marketable age.

The following tabulation summarizes the answers received to this question:

Percent	No. of breeder	Total
20	51	1
50&75	8, 79	2
80-100	9, 17, 24, 25, 35, 36, 55, 62, 69, 71, 72, 73, 76, 220	14
125&130	1, 40	2
135&150	20, 39, 52	3

Six did not reply to the preceding question. It will be seen that fourteen men report that according to the number of ewes placed with rams they market eighty to one hundred percent lambs. One man reports twenty percent, but that is so low that it must be for only one year.

QUESTION 20 At what age do you wean your lambs and how do you treat them afterward?

QUESTION 21 Do you dock and castrate lambs? At what age? If not, why?

The following summary gives the general content of the answers received to the preceding questions:

No.

1 weans at six months and gives corn and oats. He does not castrate as he raises breeding stock.

2 weans at three and a half or four months and allows them to run on grass. Docks, and castrates culls, raises breeding stock.

3 weans at five months and then allows to run on grass and feeds oats and bran.

6 lets ewes wean them. Docks and castrates only the late lambs that have to be carried over.

8 weans at four to five months, gives fresh pasture. Docks and castrates at six weeks of age.

9 weans ram lambs at six months, ewes wean others. Gives corn or oats if pastured in stubble. Docks but does not castrate. Does not keep pure bred flock.

17 weans at five months, feeds well afterward. Docks and castrates at six weeks.

20 weans at four months, gives oats and fresh pasture. Docks and castrates at three weeks.

24 weans at five months. Lambs then run in stubble in which rape and clover were sown with the oats. They run here and in the meadow or corn field for six weeks and are then sold. They are docked and castrated at ten to twenty-one days.

No.

25 weans at 110 days. Docks and castrates at ten days of age.

35 weans at five months, gives some grain and good pasture.

36 weans after threshing, turns into rye or clover field and gives some grain. Docks and castrates at two weeks of age.

39 weans at seven months. Docks and castrates at thirty days.

40 weans at six or seven months, gives fresh pasture with some grain or corn field. Docks and castrates at six to eight weeks.

42 weans September first and turns lambs into corn field. Docks and castrates at ten to fourteen days.

46 sells at seventy pounds weight and docks.

49 lets ewes wean lambs and does not dock or castrate.

51 weans at four months and feeds. Does not dock or castrate.

52 weans when sold. Docks at one or two days of age and castrates at one month.

53 sells what are culled out in August, weans the ewes left. Docks the best ewes at one week of age. Has grade flock.

62 weans at three to four months. Docks and castrates at five to ten days.

69 sells at three or four months. Docks only ewe lambs kept.

71 weans at five months. Does not dock.

72 weans at four to six weeks before breeding ewes and gives ground grain and fresh pasture. Docks at ten to twenty-one days. Raises breeding stock.

73 Docks and castrates when small.

76 weans at four months, lets run in corn field with pasture or clover. Docks and castrates.

79 gives bran and oats. Docks and castrates.

220 lets ewes wean them. Docks and castrates at one month.

Eighteen breeders wean the lambs at three to six months of age with the most of them being weaned at five or six

months. Two wean the lambs at seven months, one sells at three or four months and does not wean the lambs. Four do not answer and it is to be inferred that they let the ewes wean the lambs.

The general practice is to give the lambs fresh pasture when weaned or to turn them into the corn fields in addition to pasture in the meadows. Eight men feed grain in addition to the pasture the lambs have when weaned. One man provides fresh pasture by sowing rape two and a half quarts and clover four quarts per acre when the oats are sown.

Fifteen dock and castrate the lambs at five days to six weeks of age. Eight dock and do not castrate the lambs. One man castrates the late lambs that have to be held over the winter. Two dock the ewes that are to be kept in the flock. One man docks all and castrates the rams culled out as unfit to sell as breeding stock.

QUESTION 22 How do you feed and care for your ewes (a) from the time they are bred until they lamb;(b) from lambing until lambs are weaned;(c) after weaning until time for breeding?

QUESTION 23 How do you care for your rams (a) during breeding season;(b) out of breeding season? (c) Do you allow them to run with the ewes during the period of pregnancy.

QUESTION 24 Do you feed grain, hay, or other feeds to lambs while they are suckling; what and how much? At what age do you begin and how long do you continue? Do you have special crops such as rye or rape for ewes and lambs during the suckling period?

The summaries of each answer to the above questions are as follows:

No.

1 During period of pregnancy ewes are fed oats, corn, and clover hay. Bran is added to the ration after lambing. After weaning the lambs, the ewes are turned to pasture.
The ram runs with the ewes continuously during the breeding season. Out of season, he is fed with a bunch of yearling rams. The ram is not allowed with the ewes during the period of pregnancy.
Lambs are fed bran and oats in a creep before weaning.

2 During the breeding season, ewes are fed oats, corn ensilage and fodder.
The rams run with the ewes continuously.
The lambs are given no grain until weaned

3 The ewes run on pasture and are fed very little grain. They are confined only in stormy weather.
The rams are fed a little grain once per day during the breeding season. They do not run with the ewes during the period of pregnancy.
The lambs are fed a little grain as soon as they will eat and this is continued through weaning time. Sometimes rape is grown for the flock.

6 The ewes run on blue grass until fall when they are fed corn fodder and clover hay until the pasture is good again.
The rams run with the ewes except for a period from July 20 October 10.
There is usually a rye field to be pastured in the spring.

No.

8 The ewes run on pasture, when pasture is short corn fodder is fed. Clover and cowpea hays are fed during lambing time. Rams have the same as the ewes and run with the ewes except at lambing time.

Flock runs on good blue grass pasture.

9 Ewes run on pasture and stalks until the weather is bad and then they are fed corn, oats, bran, corn fodder, and clover hay, and run in wheat field. They then run on pasture until breeding season.

The ram has the same care as the ewes and is seldom kept after the breeding season.

17 Ewes are fed on corn, oats, clover hay, and good blue grass pasture, with more after lambing. After weaning the lambs, the ewes run in blue grass pasture.

The rams are given the same feeds as the ewes and they do not run with the ewes during the period of pregnancy.

The lambs have all the corn, oats, and clover hay they will clean up while suckling, from the time they will eat until marketed. Special forage crops are grown for the ewes and lambs.

20 Ewes have run of farm with oats and clover hay. After lambing they are fed grain and have run of pasture, and after weaning lambs are kept on good pasture.

The rams are fed oats during breeding season. Out of breeding season they are kept separate and well fed. They are not allowed with ewes during the period of pregnancy.

Lambs are fed grain, one fourth pound per day as soon as

they will eat and for about sixty days. Rape is usually grown for them and rye also, when conditions are favorable.

24 Ewes have the run of the farm until the weather is bad, then in lots and pastures near the sheep barn and corn fodder, clover and alfalfa hay are fed at night. One pint of oats is fed per ewe beginning six weeks before lambing. They have all they want to eat after lambs are one week old. During the summer the ewes have the run of entire farm. Rams are fed alfalfa hay and oats during breeding season and run in blue grass pasture during the day. Rams do not run with ewes except for a period about two weeks after breeding, to catch ewes that were not bred at first. They are fed oats and alfalfa until spring when they are turned with cows on pasture. They are not allowed with ewes during period of pregnancy.

A creep is used and lambs have a chance to eat as much as they want of corn, oats, and alfalfa hay. Ewes and lambs have good pasture of white clover and blue grass and sometimes rye, rape and clover.

25 Ewes have blue grass pasture and shock corn in the winter. The rams run with the ewes continuously.

The lambs have no special feeds.

35 Before breeding the ewes have pasture, then corn, corn fodder, and clover hay as the season advances. Corn is fed until the grass is "strong".

The ram is pastured until two weeks before the breeding season and then is fed some grain, and if kept separate

No.

35 from the ewes is fed a variety of grains.
No special crops are grown for the ewes and lambs and no grain is given them.

36 The ewes run on pasture and stubble fields where rape has been sown and in stalk fields. They are fed clover and alfalfa hay with a little grain when the pasture becomes short and after lambing they are fed more liberally.
The rams run with the ewes during the breeding season and during the period of pregnancy. At other times they have a small pasture with a shed.
Lambs are given some grain until good pasture comes. Some rape is used but usually they have clover and timothy.

39 The ewes have the run of the farm until bad weather and during lambing time when corn, oats, clover hay, and corn fodder are fed. This feeding continues until they again have the run of the farm.
The rams are treated the same as the ewes and run with them continuously.
The lambs are fed some grain during the suckling period.

40 The ewes have the run of the farm, being kept in the barn or shed at lambing time; and fed corn, oats, and clover hay until grass comes.
The ram runs with the flock.
Sometimes rape is sown for fall pasture.

42 The ewes rough it in the pasture with some clover hay at night. Some oats are fed three weeks before lambing and

No.

42 this continues until there is good grass.

The rams run with the ewes during the period of pregnancy.

No grain is fed to the ewes after they are turned out to pasture but there is usually a clover field in addition to the blue grass pasture.

46 Ewes are pastured and run in the stalks except during severe weather and before lambing, when they are fed oats and alfalfa hay.

The rams run with the ewes continuously until after the breeding season when they are sold.

The lambs have access to alfalfa hay and rape pasture.

49 Ewes are on pasture except during extremely bad weather and are then fed clover hay and a little grain. Ewes and lambs have the same attention.

51 The ewes have pasture, silage, and clover hay all the time. Lambs are fed ground corn and oats and clover hay with rye pasture for the flock.

52 The flock has the run of the pasture.

The ram is removed about one month before the ewes begin to lamb.

Ground oats and corn are fed to the lambs as soon as they will eat.

53 The ewes run on pasture until January first if the weather is good. Then oats and clover hay with plenty of salt and water are given. They are fed the the same ration until they are turned out to pasture.

No.

53 Rams are not allowed with ewes during the period of pregnancy.

No special crops are grown for the ewes and lambs.

62 ------

69 Ewes are pastured until January fifteenth. Then clover hay is fed at night with oats and bran during lambing and until grass comes.

The rams run with the ewes all the time.

The lambs are fed bran and oats as long as they will eat them.

71 The entire flock runs on pasture.

72 A little grain is fed to the ewes after weaning the lambs. After mating, oats, shelled corn, clover hay, and corn fodder are fed to keep them in firm flesh. The grain ration is increased after lambing and bran is added.

The rams have the same treatment as the ewes and are kept from the ewes only a short time before breeding season.

Lambs are fed ground corn, bran, and sweet clover hay, and this is continued until the grass is good. Rye pasture has caused scours but rape has proved very satisfactory.

73 The rams run with the ewes during the period of pregnancy.

The whole flock has good pasture.

76 Ewes are fed grain, clover hay, and silage from time of breeding through lambing. Then are given good pasture, and run in stubble just so as to be kept on the gain.

No.

76 The rams are treated the same as the ewes and run with them during the period of pregnancy. Out of breeding season, they are given grain if necessary.

79 Ewes run on pasture until a short time before lambing, when they are fed some oats and bran. This feeding continues until they are on good pasture again.

Lambs are fed grain, and no special crops are grown for the flock.

220 The ewes have plenty of exercise and a shed to run into. They have shock corn and straw for feed and later are fed oats and clover hay.

The ram is allowed with the ewes during the period of pregnancy.

Rape is sometimes used for fall pasturage.

QUESTION 25 Crops grown on the farm. Yield.

The yield of corn ranges from forty to eighty bushels per acre, oats thirty to sixty-seven bushels, wheat eight to thirty bushels, rye twenty-six to thirty bushels per acre, barley thirty bushels, and cowpeas ten to twenty bushels. Sweet corn yielded from three and a half to six tons per acre, clover and timothy hay one and a half to three tons, alfalfa four and five tons, cowpea hay one and a half to two tons per acre. Where there is a great difference in the yields stated, as in corn which varies from forty to eighty bushels per acre, the greater number reported yields near the lower limit.

All grew corn and oats each year and some kind of hay.

Clover was grown in a number of instances as well as timothy. Wheat and barley are used more to fill than for any other reason, and barley is fed in only one case. Alfalfa is reported from five farms but is fed in only three cases. Cowpea hay has been fed in two instances. Corn, oats, clover hay, mixed hay, alfalfa, corn fodder, and ensilage are the feeds usually given to the flock. From these reports of yields and answers to the preceding question it is learned that no special crops are grown for the winter feeding of the flock.

QUESTION 26 Amount of grain and hay sold from the farm.

QUESTION 27 Feeds purchased.

The following tabulations give the answers received to the two preceding questions:

No.	
1	sells wheat and buys 5000 bushels of corn, three to five carloads of hay, and five to seven tons of cotton seed meal.
2	sells wheat and buys hay and corn, but no commercial feeds as cotton seed or linseed meal.
3	sells no grain and buys hay cotton seed meal and bran.
6	buys corn and cotton seed meal.
9	-----
17	feeds all and buys none.
20	sells 3000 bushels of grain and buys none.
24	sells 100 bushels wheat, 1400 bushels oats, 3000 bushels corn, 30 tons hay and buys none.
25	-----
35	sells $1000 worth and buys shorts for hogs.
36	sells 1000 to 5000 bushels of corn and buys some hay and bran.
39	sells very little and buys some mill feed.

No.

40 -----

42 -----

46 sells none and buys sweet corn, hay, tankage, shorts, and ground corn.

49 sells some and buys shorts, bran, and stock food.

51 sells none and buys none.

52 sells 2000 bushels of corn, $1700 worth of sweet corn, $571 peas; and buys two or three tons of sugar feed bran and molasses alfalfa.

53 sells none and buys none.

62 sells none and buys corn.

69 sells none and buys 400 bushels of corn.

71 sells none and buys none.

72 sells some grain and timothy hay and buys some bran for sheep.

73 -----

76 sells some hay.

79 sells none and buys oats, bran, mill feed, and some corn.

220 sells 5000 bushels of oats and fifty tons of hay; and buys corn.

From these answers one concludes that the most of the men answering the questions practice a combined system of grain and live stock farming. Three sell grain or hay and do not purchase any feeds. Four sell none and buy none. Ten sell some and purchase some. Six sell none and purchase some. One man mentions that he buys bran for his sheep. Five do not answer.

QUESTION 28 How many months in the year are your sheep allowed on pastures and fields, and over how much of your farm are they allowed to graze in a twelve month period?

QUESTION 29 What kinds of pasture, forage, and aftermath are grazed over by the sheep during the year? If possible state acreage of each. Give estimate of value of pasture and forage consumed by sheep. To what extent do sheep share pasture, forage, and aftermath with other livestock. If you have a record of the number of sheep and the number of days they were allowed on certain areas of pasture, forage or aftermath, kindly submit same.

The following answers were received to the preceding questions:

No.

1 pastures flock nine months over 100 acres. The flock shares pasture with cattle, hogs, and horses.

2 pastures flock ten months over 230 acres, of blue grass, white clover, timothy, and stubble.

3 leaves the flock on pasture all the time and over as much of the farm as possible.

6 pastures nine months over most of the farm.

8 gives the sheep the run of some fields all the time. They are moved from field to field as conditions demand. They pasture over low-ground wild grass, blue grass and clover.

9 pastures the flock nine months except when there is a meadow for spring plowing, then they are allowed on pasture all the time. Graze over forty acres wild grass, ten to twenty of

No.

9 of tame grass, and timothy and clover. They are changed from field to field as they need it. Value of pasture is five dollars per acre.

17 Sheep have run of pasture any time and graze over entire farm. They graze over rape, clover, blue grass, rye, and corn fields. Twenty dollars is the estimated value of the food consumed per month for the flock of two hundred. They do not share pasture with other stock much of the time.

20 The sheep have access to the entire farm sometime during the year if the weather permits. They graze over twenty-five acres of timothy pasture, sixty acres of stubble, both the pasture and the stubble have clover. 115 acres of stalks, and one to five acre plots of rye. The sheep consume about seventy per cent of the feed.

24 Sheep run on pasture ten months over entire farm. They graze over 140 acres of blue grass; forty acres stubble with rape and clover; 100 acres of corn stalks; forty of meadow, and three of rye. Sheep and other stock run together from May until December. The sheep consume one-third of the feed.

25 Sheep run all the year and are shifted from pasture to pasture.

35 Sheep run twelve months over all the fields that are fenced They graze over blue grass, clover, timothy, and stubble. Generally consume two-thirds of the pasturage.

No.

36 pastures his sheep eight months and they graze over the entire farm in that period. They graze over timothy and blue grass, and alfalfa and blue grass pastures; stubble with rape and clover; corn fields with rape. Eight or ten sheep are calculated to graze over as much pasture as one steer or horse. By sowing rape in the corn and stubble, flock can be pastured from August 1 to January 1 on ground that would not be used other wise.

39 Sheep graze over clover, timothy, and blue grass.

40 uses two to four pastures of blue grass, clover and timothy; and changes sheep often from one to another.

42 pastures sheep nine months on forty acre pasture and rest of farm when the crops are off.

46 leaves the sheep out practically all year, usually in the timber. They graze over blue grass, rape; and over blue grass, clover and alfalfa last year. They share pasture with cattle.

49 -----

51 pastures six months and the sheep have range of the farm the other six. They graze over blue grass, clover, oat stubble, and corn stalks.

52 pastures seven months. The sheep graze over twenty acres and the grain fields when fenced. They have blue grass pasture.

53 pastures sheep eight months on twenty acres.

62 allows sheep over entire farm at some time during the year.

69 pastures nine months over eighty acres of clover, timothy, and sprouts.

No.

71 pastures twelve months in fields where other stock will not do well.

72 gives sheep access to pasture except when snow is deep. They graze over blue grass, clover and tirothy, and oat stubble. They are put into corn fields if corn stands up well. The ewes run on blue grass pasture for they seem to get into better breeding condition.

73 pastures for eight months. One acre pastures five sheep. They graze over blue grass, timothy, and clover.

76 pastures seven to eight months over the whole farm except for the fall wheat and young clover. They have blue grass, oat and wheat stubble.

79 pastures twelve months over two hundred acres of clover and timothy, and blue grass. Sometimes they pasture with other stock.

220 pastures sheep ten months. They have run of entire farm.

QUESTION 45 Give reasons for keeping sheep on your farm.

In connection with questions 28 and 29, question 45 was considered. The following is a summary of the answers received to the question "Reasons for keeping sheep on your farm":

Out of the twenty-six answers received, nineteen involve in their answers the utilization of what would otherwise be waste materials as; weed patches, fence rows and lanes, and the pasturage of rough ground that other stock cannot crop. Six keep sheep because they are profitable.

One keeps sheep because he loves them. Nine keep sheep because they benefit the land and give a profit in addition to cleaning up waste. Six keep them because they clean up what would otherwise be waste as weed patches and pasturage along fence rows. Three keep them because they clean up weeds and are profitable, and one keeps sheep because they help to maintain fertility.

From the answers to the three preceding questions, it is ascertained that sheep to a very great extent utilize the waste feeds around the farm. They feed and net a profit where the other stock could barely live. The flocks are small when compared with those that were once kept in this section of the country. The flock acts much as scavengers, cleaning up what the other stock will not eat or leave in the pastures. They have no special care either summer or winter when compared to that given to the other stock, yet according to the replies, they return a profit.

QUESTION 30 How many months are sheep fed harvested feeds and name the kinds of feeds used.

QUESTION 31 If possible state the amounts fed and the cost of producing these feed.

QUESTION 32 State cost and nature of buildings and equipment used for sheep.

The following tabulation summarizes the answers that were received to the above questions:

No.

1 Sheep are fed corn, oats, and clover hay for three months. The basement of the barn is used during lambing.

2 Sheep are fed harvested feeds for four months. They are fed

No.

2 in sheds and there is little equipment.

3 Sheep have open sheds except in lambing when barn is sometimes used.

6 Sheep are fed clover and fodder for four months.

8 Sheep are fed harvested feeds four months. They are fed corn with corn fodder and clover hay while suckling lambs. They have a shed built against the barn.

9 Sheep are fed harvested feeds three months. The sheep barn is twenty by thirty feet in size and cost three hundred dollars

17 Sheep are fed corn, oats, barley, and clover hay for five months. The barn cost $2000.

20 The sheep are fed clover hay and shock fodder three months. The sheds used cost one hundred and fifty dollars.

24 Sheep are fed harvested feeds as; oats, corn, speltz, corn fodder, alfalfa, clover hay. The amounts fed and the cost of production are as follows. The flock contains 120 sheep.

75-100 bu. oats or speltz which cost to produce 20¢ per bu.
100 bu. corn which cost to produce 25¢ " "
10 tons alfalfa hay which cost $2.50 to $3.00 per ton.
75 shocks fodder which cost 20¢ to produce.

A round sheep barn, forty-four feet in diameter, built out of old material at a cost of $150 is used.

25 Sheep are fed harvested feeds four months. A barn is used.

35 Sheep are fed harvested feeds two to four months. Winter feeds are ear corn, shock corn, corn stover, clover hay, and blue grass pasture. They are placed in a shed only at lambing time.

No.

36 Sheep are fed oats, corn, clover and alfalfa hay, and some roots from three to four months of the year. The corn crib and a corner of the barn and the hay mow as emptied are used during lambing time.

39 -----

40 Sheep are fed harvested feeds two or three months. The barn is twenty-five by fifty feet in size.

42 -----

46 The sheep have a lean-to shed for shelter.

49 -----

51 Sheep are fed corn, oats, clover hay, and silage four months. The shed opens to the south.

52 Sheep are fed harvested feeds five months of the year. These feeds are;oats, sweet corn, corn silage, stalks, and oat straw.

53 Sheep are fed four months on oats and clover hay. One pint of oats per ewe each day and all the clover hay they will eat without any being wasted. They have a shed off the hay barn twelve by thirty feet in size.

69 Sheep are fed harvested feeds four months. Feeds are clover and fodder with oat hay occasionally. They are kept in the general farm barn.

62 The sheep are fed corn, oats, and clover hay four months of the year.

71 Sheep rough it on pasture all the time.

72 Sheep are fed grain and hay when frost comes. The sheep barn for thirty-five ewes cost three or four hundred dollars.

No.

73 Sheep are fed corn, oats, hay, and fodder four months of the year. They are housed only in bad weather.

76 Sheep are fed harvested feeds five months. These feeds are; corn, oats, silage, clover hay, corn fodder, and straw. They have run of shed facing the south.

79 Sheep are fed some grain, alfalfa, and clover hay for three months. The sheep shed cost two hundred and fifty dollars.

220 Sheep are fed harvested feeds two months and have the run of a good shed.

There were twenty-five answers to these questions. Sheep are fed harvested feeds from two to five months of the year. These feeds consist of; corn, oats, barley, clover or alfalfa hay, corn fodder, and ensilage. The amounts of feed that are used are given in only two cases. Four men have barns used exclusively for sheep and the remainder use either the general farm barn or sheds. There is one exception to this for one man provides no shelter whatever for his sheep.

QUESTION 33 Give estimate on total cost of maintaining sheep for twelve months, including such items as cost of harvesting feeds, labor, pasture, shelter, and interest on investment.

Eight estimates on the cost of maintaining a sheep for one year were received. Three give the cost at three dollars, one at $2.80 to 3.00, one at $2.00 to 2.50, one at $2.40 not including pasture, one at $3.75, and one who allows his sheep to rough it the entire year, at twenty-five cents per head. This last is too low to be considered for the amount given would scarce

pay the interest on the investment.

QUESTION 44 What valuation would you palce on the manure from one hundred sheep for one year?

Six definite valuations ranging from sixty-five to one hundred and fifty dollars were received in the answers to the preceding question. One man says that the manure from one hundred sheep for one year would equal that from a carload of cattle. Several make note to the effect that they realize it is very valuable. Three estimate the value of the manure from one hundred head of sheep for one year at seventy-five dollars, one at sixty-five dollars, one at one hundred dollars, and one at one hundred and fifty.

Taking the value of the manure at seventy-five cents per head and the cost of maintainance at three dollars per head per year, the cost of keeping a sheep is six and one-fourth mills per day.

QUESTION 39 Do you dip your sheep; how often; what dip do you use?

The summary of the answers to the question in regard to dipping is as follows: Six dip twice per year, seven dip once per year, two dip occasionally, one dipped once using crude oil and has not found it necessary to repeat the experience, eight have never dipped and four fail to answer. All use the proprietary dips found on the market. The coal tar preparations have the preference.

QUESTION 34 Give time of marketing lambs and sheep. Approximate weight of lambs and of sheep at time of marketing.

QUESTION 35 Do you ship to market direct or sell to localbutchers or drovers? What conditions in your locality, if any, discourage shipping to the open market directly?

QUESTION 36 If possible, state net prices received per cwt., or per head for sheep and lambs in 1907, 1908, 1909, 1910, 1911, 1912.

Summaries of the answers to the three preceding questions are as follows:

No.

1 sells rams for breeding purposes at twenty-five dollars for lambs and fifty for yearlings.

2 markets culls in June shipping direct to market.

3 sells yearlings as breeders.

6 ships direct to market, buying those of the locality.

8 sometimes sells when lambs are one hundred pounds in weight, often keeps them until spring. Sells to local shipper because he has not a carload.

9 markets earliest lambs in July at ninty pounds, later ones in January at 106 to 108 pounds. Ewes weigh one hundred and thirty-five to one hundred and forty pounds. Sells to local buyer. Prices received; 1909 $4.50 per head, 1910 $10.00 per ewe for ewes and lambs after lambing, 1911 $4,63 per head, 1912 lambs $6.74 per head.

17 markets when they are fat, on the open market at 85 to 160 pounds weight. Prices 1910 $5.75, 1911 $6.00, 1912 $7.50.

24 sells in the fall, lambs weighing sixty to seventy pounds, sheep ninty to one hundred, on the Chicago market. Prices:

1907	$5.40 per head	1911	$4.10 per cwt.
1908	5.50 per cwt.	1912	lambs $6.50; sheep $3.75.
1909	6.50 " "		
1910	6.65 " "		

No.

20 sells in the fall to a local drover, lambs weighing one hundred pounds, ewes one hundred and fifty pounds.

25 sells on the Chicago market.

35 sells to local drover at a weight of sixty-five to one hundred pounds. The trouble is in not having a carload and inequality in size and condition.

36 sells in December and in June to local local drover at weights of 60-75 and 140-200 pounds. Ships when a car can be filled. Local butchers do not pay a good enough price and there is much difficulty in filling a car.

39 sells from September to April to local dealers, prices: 1910 $7.00 per cwt., 1911 $6.25, 1912 $6.00.

40 sells lambs in September or October at eighty pounds, sheep at 125 to 150 pounds, on the open market. Prices; 1910 $7.65 per cwt.

42 markets lambs usually about December 1, weighing 100 pounds. prices; 1911 $5.50, 1912 $6.00.

46 sells ram lambs in July weighing seventy pounds, to local drovers. Price 1912 $5.00.

49 ships to market. 1912 price $5.00.

51 markets in early spring and late fall at weights of 80 and 120 pounds, both locally and on the open market. The average price received for the last six years is $6.00 per cwt.

52 sells in April, May, or June, lambs at 60-110 pounds, sheep 150-200 pounds; on the Peoria market. Prices; 1910 $8.00 1911 $6.00

No.

53 markets lambs at four to six months weighing eighty to one hundred pounds, on the open market. Prices:

1907	lambs	$6.25	per head		sheep		per head
1908	"	5.00	"	"	"	$6.15	"	"
1909	"	5.50	"	"	"	6.00	"	"
1910	"	5.50	"	"	"			
1911	"	4.75	"	"				
1912	"	5.75	"	"	"	4.60	"	"

62 sells according to the condition of the market.

69 markets some at three months weighing fifty-four pounds and the remainder at five months weighing eighty pounds. Sells to a local drover because of the small number raised by one man. Prices; 1911 lambs $7.75 and $6.00.

71 sells the last of June at sixty-five pounds for the weight of the lambs and 130 for the ewes, sells to a local dealer or on the open market. Prices 1911 $25, 1912 $20 per head.

72 sells in June or July weighing from seventy to ninty pounds, to local drovers. Prices.

1907	$6.00	1910	$7.00
1908	6.00	1911	5.00
1909	7.00	1912	5.50

73 sells at four or five months when they weigh seventy pounds, on the open market. 1912 price $7.00 per cwt.

76 sells in late fall or winter at seventy pounds weight direct on open market. Prices; 1910 $8.50, 1911 $6.65, 1912 $7.40.

79 -----

No.

220 sells on the Chicago market when lambs weigh 100 pounds.

Prices that were obtained for lambs are as follows:

1907	$5.40.	$6.00.	$6.25*					
1908	5.50	5.00*	6.00					
1909	4.50*	6.50	5.50*	$7.00				
1910	6.65	7.00	7.65	8.00	$5.50*	$8.50		
1911	4.63*	4.10	6.25	6.00	5.50	4.75*	$7.75	$5.00$6.65
1912	6.74*	6.50	6.00	6.65	5.00	5.75*	5.50	7.00 7.40

* indicates that price given was per head.

Lambs are marketed from June until the following April and the weight varies with the age ranging from sixty to one hundred and ten pounds. The sheep are often marketed at the same time as the lambs, depending upon their condition and the prevailing market price. The fact there is so few sheep in a locality discourages the breeder from marketing his own animals and also discourages breeding. It is difficult for a man to fill out a carload when he does not have enough of his own breeding. Then even if he can fill out the carload, the animals are often of the grade and quality to make an uneven looking shipment. Three men produce pure bred stock to supply other breeders and for that reason sell on the open market only the animals that are culled out as unfit for breeding stock.

QUESTION 37 Give method of shearing and average weight of fleece.

QUESTION 38 Method of shearing, by hand or by machine; cost per head; kind of twine used; kind of sacks and cost.

No.

1 shears with machine, fleece averages eleven pounds and ties with wool twine.

2 shears by hand at a cost of 15¢ per head, fleece averaged up until the last two years fifteen pounds, last two years eleven pounds. Jute and India twine are used for tying fleece and wool sacks for baling.

3 shears by hand, Shropshire fleeces average eight to ten pounds Cotswold twelve to eighteen pounds. Wool twine is used.

6 shears by hand at a cost of 10¢ per head. Wool twine is used and burlap sacks costing 30¢.

8 shears by hand at a cost of eight and one-third cents. Uses wool twine and hemp sacks furnished by the company shipped to. Fleeces average eight pounds.

9 shears by hand at a cost of eight and one-third cents per head. fleeces average seven and one-fourth pounds and are tied with wool twine put into harness sacks.

17 shears by hand at a cost of 10¢ per head. Fleeces average ten pounds and are tied with wool twine and placed into wool sacks.

20 shears with machine at a cost of 12¢, fleeces average ten pounds. Uses wool twine and sacks furnished by purchaser.

24 shears with machine at a cost of 5-6¢. Fleeces of Shropshire average eight or nine pounds, western six to seven pounds, ties with wool twine and uses wool sacks furnished by buyer.

25 shears by hand at a cost of 10¢ per head.

No.

35 shears by hand at a cost of 10¢ each, fleeces average seven and one-third pounds and are tied with wool twine. Uses wool sacks furnished by purchaser.

36 shears with machine at a cost of 10¢ per head. Fleeces average 10 pounds and are tied with wool twine. Sacks are furnished at a cost of twenty-five cents.

39 shears by hand at a cost of 10¢. Fleeces average eight pounds, wool twine and wool sacks are furnished.

40 shears by hand at a cost of 10¢. Fleeces average eight to nine pounds. Uses wool twine and wool sacks.

42 uses machine, and wool twine. Fleeces average ten pounds.

46 shears with machine. Fleeces average eleven pounds.

49 shears by hand at a cost of 12½ ¢. Fleeces average ten and a half pounds and are tied with flax twine.

51 uses a machine at a cost of 15¢ per head. Fleeces average twelve pounds and are tied with wool twine. Purchaser supplies the sacks.

52 shears by hand at a cost of 10 to 15¢ per head. Fleeces average seven to ten pounds and are tied with wool twine. The purchaser furnishes the sacks.

53 shears by hand. Fleeces average ten pounds. Uses wool twine for tying fleece.

62 shears with machine at a cost of 10¢. Average weight of fleeces seven to eight pounds. Wool twine and wool sacks are used.

69 shears by hand. Fleeces average six and one half pounds, wool twine is used in tying fleece.

No.

71 shears with machine at a cost of 10¢. Average weight of fleece in 1912 was seven pounds. Uses wool twine.

72 shears by hand at a cost of 10¢. Fleeces average ten pounds and are tied with wool twine.

73 shears with machine at a cost of 10¢ per head. Fleeces average six to seven pounds and wool twine is used.

76 shears by hand at a cost of 10¢. Fleeces average seven to eight pounds and are tied with wool twine and placed into wool sacks costing 35¢ each.

79 shears by hand at a cost of 10¢. Fleeces average seven to twelve pounds and are not tied with binder twine. Sacks are furnished by the purchaser.

220 shears by hand at a cost of ten cents. Fleeces average ten pounds and are tied with wool twine.

Eighteen shear by hand and ten use the machine. Fifteen who report the cost of shearing give scale ranging from eight and one-third cents to fifteen cents per head. Ten report the cost as being ten cents per head. Seven give cost of shearing with machine as from five to fifteen cents, with four reporting cost at ten cents.

The average weights of fleeces are as follows:

Pure bred Shropshires	6	report	average weight	9.7 pounds
Pure bred Oxford	3	"	"	10.8 "
Pure bred Cotswold	1	"	"	15.0 "
Pure Rambouillet	1	"	"	11.0 "
Grades(12 Shropshire)	17	"	"	8.2 "

QUESTION 40 Do you market wool clean and comparatively free from burs and tags?

In answer to the above question as to condition of wool when marketed, practically all reply that they market their wool clean.

QUESTION 41 Methods of marketing wool - i. e.; to local dealers, to buyers from a distance, to wool commission houses, or to woolen mills?

QUESTION 42 Net prices received for wool per pound in; 1907, 1908, 1909, 1910, 1911, 1912.

The following tabulation summarizes the answers that were received to the preceding questions.

No.

1 markets wool in Indiana. Price for wool in 1912 23½ ¢.

2 sells to local dealers and in Ohio. Prices received; 1911 20¢, 1912 21¢.

3 sells to local dealers and to commission houses. Prices; 1911 22¢, 1912 24¢.

6 sells to wool commission houses in St.Louis.

8 sells to woolen mills, local buyers, and woolen merchants.

9 ships to Weil Bros. Ft. Wayne, Indiana. Prices received; 1911 18¢, 1912 25¢.

17 sells to local dealers. Prices; 1910 20¢, 1911 18¢, 1912 22¢.

20 sells to wool firms in Springfield. Prices received; 1911 17¢, 1912 23¢.

24 sells to wool commission houses. Prices received:

1907	28¢	1910	Shropshire 20¢,	Western	15¢
1908	17¢	1911	" 22¢	"	18¢
1909	22¢	1912	" 26¢	"	22¢

No.

25 sells to local dealers and to commission houses.

35 has tried all three plans. Price, 1912 21½¢ to 26½¢.

36 sells to commission house or to mills. Price, 1912 21½¢.

39 sells to buyers from a distance. Prices; 1911 20¢, 1912 18¢.

40 sells to local buyers. Prices; 1910 28¢, 1911 20¢, 1912 22¢.

42 sells to local dealers. Prices 1911 18¢, 1912 23¢.

46 sells to commission house in Peoria. Price, 1912 20¢.

49 sells to local dealers. Price, 1912 18¢.

51 -----

52 sells to local dealers. Price; 1911 20¢, 1912 22¢.

53 sells to buyers from a distance. Prices received:

1907	24¢	1910	18¢
1908	15-17¢	1911	16¢
1909	26¢	1912	22¢

62 sells to local dealers.

69 sells to local buyer. Price 1911 20¢.

71 sells to local dealer. Price; 1911 25¢, 1912 20¢.

72 sells to local dealer. Prices received:

1907	26¢	1910	23½¢
1908	16¢	1911	17½¢
1909	30¢	1912	18¢

73 sells to local dealer.

76 sells to wool commission houses. Prices;1910 20¢, 1911 19¢, 1912 18¢.

79 sells to local dealers. Prices; 1911 22¢, 1912 20¢.

220 sells on the open market as he buys wool.

The prices received for wool in 1911 and 1912 and the number receiving it are as follows:

1911		1912	
Price	Number receiving it	Price	Number receiving it
16¢	1	18¢	2
17&17½	2	20	3
18	4	21-21½	3
19	1	22	5
20	4	24	1
22	3	25	1
25	1	26&26½	2

The average price received for wool in 1911 was 19½ cents per pound; and the average price in 1912 was 22.7 cents. The prices ranged from sixteen to twenty-five cents in 1911, and from eighteen to twenty-six and one-half cents in 1912.

Eleven men sell wool to local dealers, six to commission houses, four sell to either, two sell to buyers from a distance, and three sell in Ohio and Indiana. One man buys wool and markets it himself. From these answers one learns that as a rule better prices are received from an outside buyer than from the local dealer.

QUESTION 43 State total annual income from sales of (a) sheep, (b) lambs, (c) wool.

There were six answers to this question and the following tabulation summarizes the answers:

No.	Year	Amount of Income		Total Income	Size of Flock
9	1911		$120.89	$120.89	25
	1912		146.82	146.82	25
17	1912	Sheep	200.00	940.00	200
		Lambs	340.00		
		wool	400.00		
20	1912	Sheep and lambs	500.00	675.00	95
		Wool	175.00		
24	1912	Lambs	400.00	600.00	124
		Wool	200.00		
53	1911	Sheep	21.80	116.05	10
		Lambs	72.65		
		Wool	21.60		
	1912	Sheep	41.80	215.10	10
		Lambs	72.65		
		Wool	47.50		
69	1912	Lambs	68.00	98.00	22
		Wool	30.00		
76	1912	Lambs	450.00	600.00	100
		Wool	150.00		

The annual income from one ewe ranges from $4.45 to $21.51. This last amount is exceptionally high due to the fact that No. 53 sold out very closely because of the scarcity of feed. The average annual income per ewe as reported is $5.68. The flock of about one hundred gives the best returns.

QUESTION 46 What are the greatest discouragements to keeping sheep in your community? Do dogs, internal parasites, external parasites, lack of marketing facilities and inadequate fencing belong in this list? Which one is the greatest drawback?

The following tabulation contains the reports that were received in regard to the discouragements to keeping sheep:

Discouragement	Number Reporting
Internal parasites	3
Dogs or wolves	10
Internal parasites and dogs	4
External parasites and dogs	1
Dogs and prospect of free wool	1
Inadequate fencing and dogs	1
Inadequate fencing	2
Inadequate fencing and parasites	2
Drouth of 1911	1
Lack of knowledge of sheep	1
No excuse for not raising sheep	1

Seventeen include dogs or wolves as one of the discouragements to breeding sheep. Ten mention parasites as among the discouraging factors. Inadequate fencing is mentioned by five. Ravages by sheep-killing dogs is the principal cause for not keeping sheep and this is followed by trouble due to internal parasites.

QUESTION 47 Is the keeping of sheep as a regular practice on the increase or decrease in your community? Why?

QUESTION 48 Have any important changes taken place in the breeding of the sheep in your community in recent years, such as the more common use of pure bred rams, the changing from one breed to another, or the use of western ewes?

The following tabulation summarizes the answers to the preceding two questions:

No.	Condition of Sheep Breeding	County
1	Remains steady.	Macoupin
2	Decreasing. Pure breds are used more.	Macoupin
3	Decreasing due to low price of wool.	Greene
6	Decreasing due to high price of land	Greene
8	Increasing. Men do not know or care for sheep.	Crawford
9	Remains steady. More pure breds. Few westerns.	Crawford
17	Decreasing. No western ewes.	DeWitt
20	Decreasing due to low prices. Use of pure bred rams	DeWitt
24	Possibly increasing. Western ewes and Shropshire rams.	DeWitt
25	More sheep are fed, but no more bred.	DeWitt
35	Decreasing due to lack of fences.	DeWitt
36	More small flocks, no large ones as formerly.	Stark
39	Decreasing.	Stark
40	Decreasing. Use of western ewes.	Henry
42	-----	Knox
46	No change.	Tazewell
49	Increasing.	Tazewell
51	Increasing, but dogs are bothering.	Tazewell
52	-----	Tazewell
53	Not many sheep in locality.	Tazewell
62	No change.	Coles
69	Increasing.	Coles
71	No decrease. Use of western ewes and pure bred rams.	Coles
73	Not much change.	Coles

No.	Condition of Sheep Breeding	County
72	On a level, many went out, but others came in.	Cumberland
76	About stationary. No changes.	Warren
79	Decreasing if any change.	Greene
220	Normal. No important changes.	Ogle.

Twenty-six make some answer to these questions and as in some cases, the reports differ, yet the answers can be considered as dependable for that locality. Five report the keeping of sheep as on the increase in their community. Twelve report it as steady, and nine as decreasing. Greene, DeWitt, Stark, and Henry Counties have a decrease in sheep population. Crawford County reports an increase, while Macoupin, Tazewell, Coles, Cumberland, Warren, and Ogle Counties report the number of sheep kept as being about normal.

The changes mentioned are the use of pure bred rams and the use of western ewes to a certain extent. Some of the flocks are being graded up. The Shropshire seems to be the prevailing choice.

UNIVERSITY OF ILLINOIS-URBANA
3 0112 079095334